MAGLEV HIGH SPEED RAIL IN SOUTHERN CALIFORNIA

Southern California Association of Governments
Briefing Paper
January 28, 2004

MAGLEV HIGH SPEED RAIL IN SOUTHERN CALIFORNIA

1. Background

With six million additional people expected to populate Southern California in the next 30 years, mobility can only get worse. Southern California's future economic viability and quality of life depend on its ability to move people and goods. To meet this challenge, a high speed rail Maglev system connecting the region's major airports and activity centers is being planned to reduce the congestion, air pollution, noise and other impacts of such tremendous growth. The primary purpose of the Maglev system is to strategically connect the major airports and to augment a balanced distribution of aviation demand and services in the region. Maglev uses proven and advanced magnetic levitation technology to move people and goods at high speeds with a high degree of safety, comfort and reliability. The Southern California Association of Governments (SCAG) has made the development of an intra-regional Maglev transportation system a priority in its Regional Transportation Plan.

2. Project Origin

The U.S. Congress, through the development and implementation of the Transportation Equity Act for the 21st century (TEA-21), authorized funding for a Maglev Deployment Program. The study examined the feasibility of Maglev technology in several transportation corridors across the country. The California Maglev project was one of seven projects selected by the Federal Railroad Administration to receive funding for the first phase of deployment. To qualify for future Federal appropriations, projects must demonstrate that Maglev technology is a viable mode of high-speed intra-regional transportation for their region with local support for the project; and they must identify public-private partnership potential to finance, construct, and operate the Maglev system.

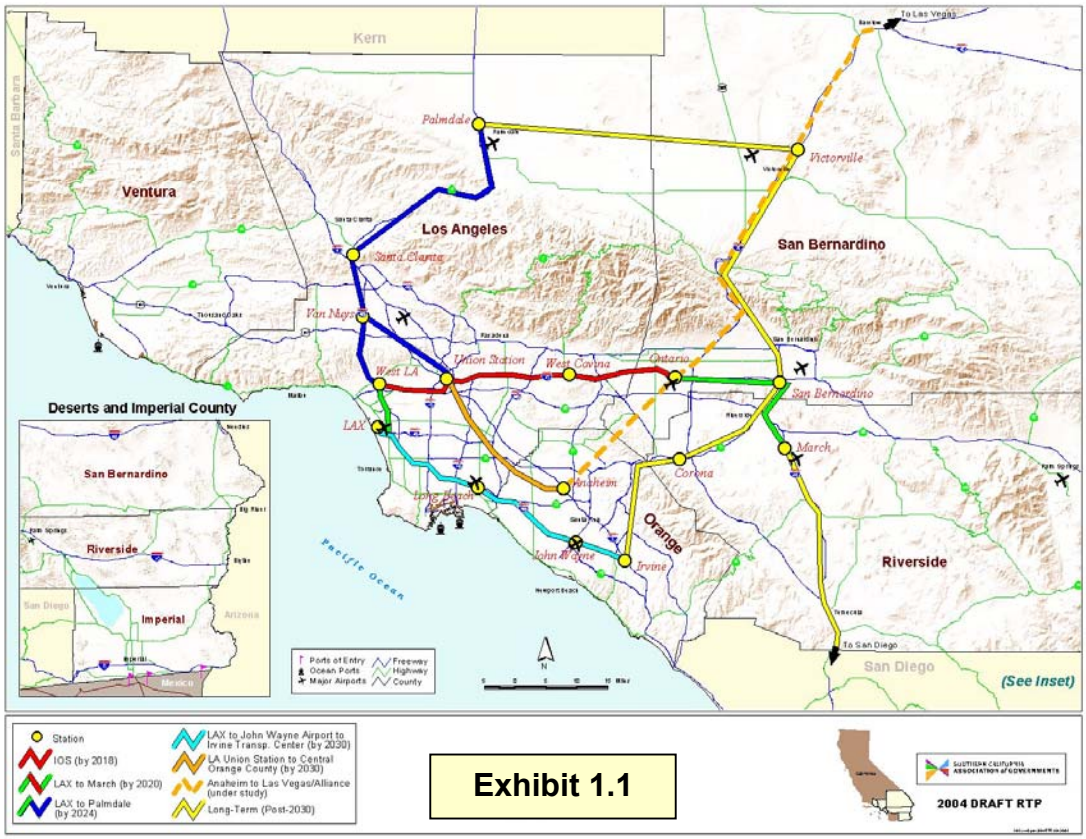
Maglev technology has been in development for 25 years. The technology identified for the California Maglev project was developed in Germany, where a 19-mile demonstration track has carried hundreds of thousands of fare-paying passengers over the last two decades. The first commercial Maglev line went into operation in the year 2003, connecting Shanghai to Pudong airport in China.

3. Benefits of Maglev Technology

Maglev uses the world's most advanced magnetic levitation technology to safely move people and cargo reliably and comfortably. Maglev technology allows travelers to ride on a cushion of air that reaches speeds up to 310 mph. The train is levitated and propelled magnetically through a propulsion system located in the guideway that can either be elevated or at grade. Passengers and cargo are efficiently transported in an environmentally friendly and energy-efficient manner. Because the elevated guideway can be built on existing freeway and railroad right-of-ways, land consumption and related impacts are minimized. Additionally, Maglev operates more quietly than conventional high speed trains, has fewer impacts on adjoining communities and operation and maintenance costs are less than conventional high speed rail.

4. Policy

The Maglev System will ultimately facilitate the development of a regional airport system, and connect to major activity and multi-modal transportation centers in Los Angeles, Riverside, San Bernardino, and Orange Counties. The region needs to decentralize its future growth in air passenger traffic and air cargo to its regional airports to the north and east. Therefore, the Maglev system becomes critical to the success of SCAG's decentralized regional aviation system. The Maglev deployment will move SCAG's region forward through investment in critical infrastructure that will quickly improve surface transportation, enhance movement of goods and revitalize the Southland's economy. The initiative is a short to medium-term fix that will inject over $26 billion dollars into SCAG's regional



economy between the years 2015 and 2018. The completion of the privately funded Maglev projects beyond 2018 will result in improvements in productivity, quality of life, and mobility and will enhance the Southern California economy. The Maglev development projects are shown in exhibit 1.1 and summarized in Table 1.1.

Table 1.1 Maglev Deployment

Milestones	Capital Costs (billion $)	Capital Cost Period
1. Ontario – West Covina – LAUPT – West LA	$5.5	2015 – 2018
2. Ontario – March Inland Port	$2.4	2018 – 2020
3. West Los Angeles – LAX	$0.7	2018 – 2020
4. LAX – Palmdale Airport	$8.2	2020 – 2024
5. LAX – John Wayne Airport – Irvine Trans. Center	$9.0	2025 – 2030
6. LAUPT – Anaheim	$3.6	2025 – 2030
7. Orange County – San Bernardino	NA	2030+
8. San Bernardino – Victorville	NA	2030+
9. Victorville – Palmdale	NA	2030+
10. March Inland Port – San Diego	NA	2030+

5. Project Area

For the past six years, SCAG has been studying the feasibility of deploying Maglev in the region. The proposed Maglev system would connect the regional airports in Southern California and will ultimately grow to cover a 275 mile network, as shown in the preceding map (exhibit 1.1). It can provide transportation for up to 500,000 riders a day. When fully deployed, the Maglev system could complement the existing state freeway system. SCAG has completed feasibility studies to evaluate each of the four proposed Maglev corridors in the region:

- Los Angeles World Airport (LAX) to March Inland Port in Riverside
- LAX to Palmdale
- Los Angeles Union Passenger Terminal (LAUPT) to Anaheim
- LAX to South Orange County (Irvine Transportation Center)

The Maglev program also envisions a connection to San Diego and a connection between San Bernardino and Palmdale.

6. Financing and Partnerships

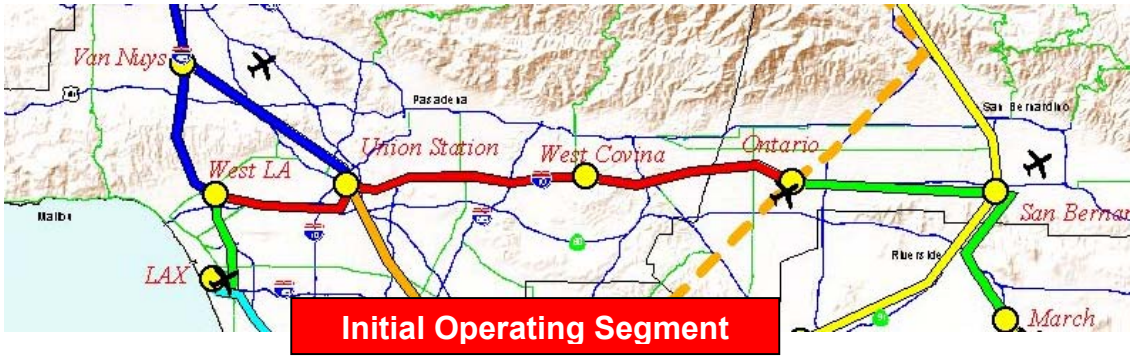
The feasibility studies for the four corridors demonstrate that the Maglev system can be constructed through a public-private partnership structure administered through a public agency, a joint powers authority (JPA), or a public non-profit (PNP) format using a number of innovative and traditional funding mechanisms. The system would be financed through tax-exempt bonds and Federal Transportation Infrastructure Finance and Innovative Act (TIFIA) program loans that would be repaid through project-generated revenues. No operating subsidies would be required. SCAG is currently working to secure federal pre-deployment funding as part of the 2003 Re-Authorization of the Transportation Equity Act to complete the Federal Environmental Impact Statement (EIS) and the State Environmental Impact Report (EIR).

7. Federal, State and Local Support

Feasibility studies have been completed through funding support from Congress, the Federal Railroad Administration (FRA), the United States Department of Transportation (USDOT), the Los Angeles World Airport, the County Transportation Commissions and state/local coalitions in the SCAG region. Also, SCAG has received additional federal funding of $1.5 million in 2003 federal appropriations to continue deployment of the Initial Operating Segment (IOS). SCAG is working for the development of the JPA along the IOS and securing a local match for federal grants from the City of Ontario, City of Los Angeles, San Bernardino Association of Governments and other cities along the corridor. Construction and deployment of the IOS will begin upon completion of the EIS/EIR.

8. Initial Operating Segment

In December 2002, SCAG's Regional Council approved an Initial Operating Segment of the Maglev system that extends from West Los Angeles through LAUPT in downtown Los Angeles to West Covina and on to Ontario International Airport, a distance of approximately 56 miles. The IOS currently being analyzed by SCAG is a component of a 92-mile corridor between LAX and March Inland Port in Riverside County that will be able to accommodate up to 135,000 riders a day. In order to ensure high average speeds and reduced trip times, stations will be spaced 15 to 20 miles apart. In selecting the IOS, SCAG considered the Regional Transportation Plan (RTP) performance measures, stakeholder support and environmental issues. Upon completion of pre-deployment planning and environmental reviews, construction of the IOS could begin by 2015. Implementation of Maglev for the IOS will enhance the regional economy by creating approximately 92,000 jobs in the SCAG region, which will be funded by $5.5 billion dollars in private investment.



Three phases have been developed to implement the Maglev deployment program:

- **Phase I.** Pre-deployment analysis was completed in December 2003 and includes assessment of right-of-ways on the freeway system and railroad corridors, forecasting of ridership and interaction with other transportation systems, LAUPT capacity analysis, stakeholder outreach, financial feasibility refinement, public/private partnership, technology transfer, and identification of an IOS.
- **Phase 2.** Preliminary engineering for the IOS will focus on defining the project to prepare for environmental assessment and analysis (EIR/EIS) for public/private investment.
- **Phase 3.** Project deployment strategy will complete the final financial analysis necessary to take the deployment program to the private market. This phase will include ridership and revenue forecasts, operation plans, a detailed financial plan, and creation of a public/private consortium for project implementation.

Next Steps

1) Secure federal and local funding to finish analysis, including prepare preliminary engineering for the IOS in order to prepare the Federal Environmental Impact Statement (EIS) and State Environmental Impact Report (EIR).

2) Form a Joint Powers Authority (JPA) for the IOS and market projects to private stakeholders.

3) Establish innovative financing strategy in Federal and, if necessary, State legislation to complete deployment of the IOS, and coalesce community support and private funding necessary for operation of the IOS by 2018.

4) Integrate Maglev into aviation Master Plans and airline operations.

Fast Facts

What: California Maglev Deployment Program
Where: West Los Angeles- LAUPT-West Covina-Ontario International Airport
Distance: Approximately 56 miles
Maximum speed: 310 mph
Average speed: 112 mph
Average Travel Time: 29 minutes
When: Could begin operating as soon as 2018.
Cost: $5.5 billion

For more information, contact:

Zahi Faranesh
SCAG Maglev Program Manager
Tel: 213.236.1819
E-mail: faranesh@scag.ca.gov

Sarah Adams
SCAG Staff
Tel: 213.236.1818
E-mail: adams@scag.ca.gov

Or visit these Web sites:

www.scag.ca.gov
www.calmaglev.org